

Notice of Allowability

Application No.

10/702,136

Examiner

Jerry Martin Blevins

Applicant(s)

HANASHIMA ET AL.

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment mailed 01/19/2006.
2. ☒ The allowed claim(s) is/are 21 and 23-25.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Allowable Subject Matter

Claims 21 and 23-25 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 21, the prior art, as best exemplified by Iwatsuka, teaches an optical functional element (Figure 1) comprising a magneto-optic functional element (element 5, specifically a Faraday rotator); first birefringent plates (elements 1 or 3) formed on one side of a surface of the magneto-optic functional element intersecting a light path for passing light at predetermined intervals, and second birefringent plates (elements 2 or 4) formed on the same surface of the of the magneto-optic functional element at predetermined intervals. However, Iwatsuka does not teach that the first and second birefringent plates are on opposite sides of the same surface. (Compare Iwatsuka, Figure 1 with Figure 20 of applicant's drawings). Furthermore, Iwatsuka, either alone or in combination with the other prior art, neither discloses nor renders obvious the teaching of first and second birefringent plates formed on opposites sides of the same surface of a magneto-optic functional element.

Regarding claim 23, the prior art, as best exemplified by Sasaki, teaches an optical functional element (Figure 1, element 4) inserted into a groove (element 3) of an arrayed waveguide-embedded optical circuit (element 1) which comprises a waveguide (elements 21-28), a groove (element 3) formed across the waveguide and two or more (specifically 8) embedded optical waveguide pairs which function as spot-size

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transformers (elements 61-68 corresponding to elements 21-28) whose members face each other across the groove, wherein the optical functional element comprises regions for passing the light propagating through the two or more pairs of the embedded optical waveguides (Figure 1). Sasaki does not teach a magneto-optic functional element or the various limitations involving birefringent plates. Iwatsuka teaches an optical functional element (Figure 1) comprising a magneto-optic functional element (element 5, specifically a Faraday rotator); first and second birefringent plates (elements 1 and 2) being arranged on one surface of the optical functional element and third and fourth birefringent plates (elements 3 and 4) being arranged on the other surface of the magneto-optic functional element. However, Iwatsuka does not teach that the birefringent plates are arranged in a checker pattern. Furthermore, Sasaki, either alone or in combination with the other prior art, does not disclose nor render obvious the teaching of the checker pattern arranged birefringent plates.

Regarding claim 24, the prior art, as best exemplified by Sasaki, teaches an optical functional element (Figure 1, element 4) inserted into a groove (element 3) of an arrayed waveguide-embedded optical circuit (element 1) which comprises a waveguide (elements 21-28), a groove (element 3) formed across the waveguide and two or more (specifically 8) embedded optical waveguide pairs which function as spot-size transformers (elements 61-68 corresponding to elements 21-28) whose members face each other across the groove. Sasaki does not teach a magneto-optic functional element or the various limitations involving birefringent plates. Iwatsuka teaches an optical functional element (Figure 1) comprising a magneto-optic functional element

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(element 5, specifically a Faraday rotator); first birefringent plates (elements 1 or 3) formed on one side of a surface of the magneto-optic functional element intersecting a light path for passing light at predetermined intervals, and second birefringent plates (elements 2 or 4) formed on the same surface of the of the magneto-optic functional element at predetermined intervals. However, Iwatsuka does not teach that the first and second birefringent plates are on opposite sides of the same surface. (Compare Iwatsuka, Figure 1 with Figure 20 of applicant's drawings). Furthermore, Sasaki, either alone or in combination with the other prior art, neither discloses nor renders obvious the teaching of first and second birefringent plates formed on opposites sides of the same surface of a magneto-optic functional element.

Claim 25 is allowed based on its dependence on allowed base claim 24.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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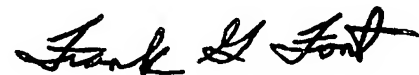
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800